

Schedule A SN 10/633,389

Response filed June 16, 2004

Specification paras. numbers 0022 and 0023 showing amendments:

[0022] Figs.1 to 3 also show the operating mechanism for the switch. This includes a pivotal operating member 40 or lever which is connected to the respective supports 16a and 16b by flexible links 42a and 42b. The operating member is pivotally mounted by being connected to the center of a side 10c of the housing by flexure means constituted by two pairs of crossed cantilevers 44a and 44b. Each cantilever pair has an upper and a lower portion which are superposed in the plan view, as in Fig.2. These four hinge cantilevers have neither connection nor contact where they cross. The pivot point or fulcrum of this flexure is the crossing point 46 of the cantilevers in the center position of the operating member 40, i.e. aligned with the housing 10, this pivot point being spaced from and aligned with the fiber gap. The crossed cantilevers are all preferably oriented at a common angle of less than 45°, generally from 30 to 40°, relative to the longitudinal axis of the member 40. Use of this flexure system avoids any sliding joints, and attendant friction, in this switch. The use of the links 42a and 42b provides a kind of differential drive which nullifies the effect to thermal expansion of the links. Balanced differential drive also limits the effects of externally sourced acceleration.

[0023] The operating member 40 is in the form of a ferromagnetic armature, and is pivotally moved by electromagnetic actuator means in the form of two solenoids 48a, 48b mounted on a bracket 50 which is fixed to the base B which holds the housing 10, the solenoids being capable of attracting adjacent outer end portions of the ferromagnetic operating member 40. The bracket 50 also carries permanent magnet 52, which provides latching magnetization, to hold the operating member in its two extreme positions, in the absence of power being supplied to the solenoids, in which positions it is in contact with the stops 54a or 54b which determine the degree of movement of the member 40. The bracket 50 may also have magnets (not shown) which control the balance properties of the switch. Alternately the magnet shown as 52 may be laterally positioned, as required to adjust balance properties. The stops 54a and 54b are carried by base B by means allowing them to be precisely adjusted so that in the first position of member 40, which is shown in Figs.1 and 2 of the drawings, the links 42a, 42b hold the supports 16a, 16b, in a first deflected position with the fiber portions 30a and 30b aligned, whereas in the second position of member 40 shown in Figs.3, the links hold the supports in a second deflected position with the fiber portion 30a aligned with the fiber portion 32. Since the stops 54a and 54b are precisely adjustable and are situated adjacent the outer end portions of the operating member 40, being 7 to 10 times as far from the pivot axis as are the links 42a and 42b, both the actuating means and stops have a mechanical advantage in relation to the links 42a and 42b, and the movement of the supports 16a and 16b can be adjusted with great precision and is not much affected by wear on the stops.--